Volunteer Firemen

Professional Journal of the Volunteer Firemen's Section of the National Fire Protection Association

Volume 1, Number 4 **BOSTON, MASSACHUSETTS** **January, 1934**

One of the biggest fires of 1933. The wholesale oil storage plant at Tiverton, R. I., which burned on November 1, destroying 5,000,000 gallons of gasoline, kerosene and fuel oil. The fire was fought by volunteer departments from Tiverton and Westport, R. I., and the departments of the cities of Newport, R. I., and Fall River, Mass.

Fewer Big Fires in 1933

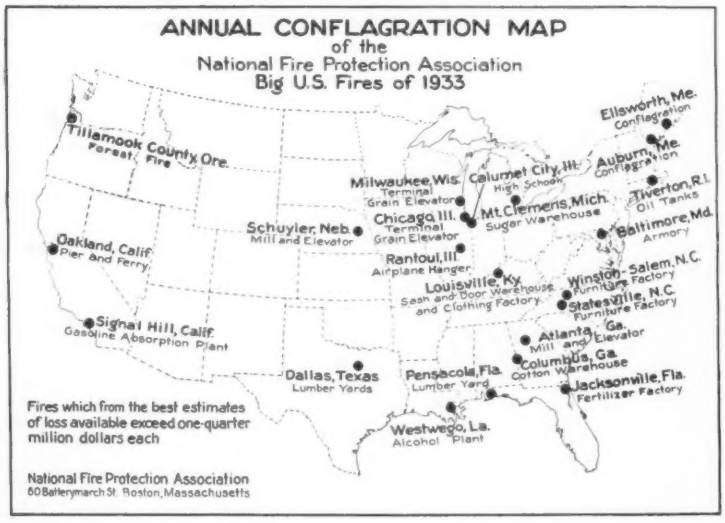
Several of Biggest Handled by Volunteers— U. S. Losses $100,000,000 under Last Year

PRELIMINARY figures for the United States indicate that the fire losses for the year 1933 will set a record low figure, the lowest of any year since before the World War. The loss in 1932 was $406,885,000, and the 1933 loss, when final figures are compiled, appears likely to be approximately $100,000,000 under that.

The N.F.P.A. Department of Fire Record prepares a list of the biggest fires of each year, including those the loss on which exceeded one-quarter million dollars. These are shown on the annual conflagration map of the United States for 1933, which is on the following page. This year the number of these big fires was approximately half the normal number.

The smaller number of large loss fires and lower losses probably reflect a period of generally improving business conditions, since it is under such conditions that people have less incentive than usual to carelessness or incendiarism, which are important factors causing losses in normal times. That the industrial states of the East have had much fewer than their usual number of big fires as shown on the accompanying conflagration map bears out this statement.

Volunteer fire departments have had to cope with several of the biggest of these fires, as, for instance, the disastrous oil tank fire at Tiverton, R. I.,


ANNUAL CONFLAGRATION MAP
of the
National Fire Protection Association
Big U.S. Fires of 1933
Ellsworth, Me. Conflagration
Tillamook County, Ore. Forest Fire
Auburn, Me. Conflagration
Calumet City, Ill. High School
Milwaukee, Wis. Terminal Grain Elevator
Tiverton, R.I. Oil Tanks
Mt. Clemens, Mich. Sugar Warehouse
Chicago, Ill. Terminal Grain Elevator
Schuyler, Neb. Mill and Elevator
Baltimore, Md. Armory
Oakland, Calif. Pier and Ferry
Rantoul, Ill. Airplane Hanger
Winston-Salem, N.C. Furniture Factory
Louisville, Ky. Sash and Door Warehouse and Clothing Factory
Statesville, N.C. Furniture Factory
Signal Hill, Calif. Gasoline Absorption Plant
Atlanta, Ga. Mill and Elevator
Columbus, Ga. Cotton Warehouse
Dallas, Texas Lumber Yards
Pensacola, Fla. Lumber Yard
Jacksonville, Fla. Fertilizer Factory
Fires which from the best estimates of loss available exceed one-quarter million dollars each
Westwego, La. Alcohol Plant
National Fire Protection Association
60 Batterymarch St. Boston, Massachusetts

on November 1, a view of which is shown on the preceding page. Others were the Westwego, Louisiana, alcohol fire reported in last month's issue, and the Ellsworth and Auburn conflagrations in Maine in May which were reported in the first issue of VOLUNTEER FIREMEN.

The fires in Ellsworth and Auburn were those which by reason of their extent and loss should be classified as conflagrations. In the Ellsworth fire 127 buildings were consumed, and the fire burned over an area nearly a mile long. In the Auburn fire, which occurred only a week after that at Ellsworth, 250 buildings were burned in a congested mercantile and residential district. Many persons were made homeless in the two fires.

Both were wood shingle roof conflagrations, in that the rapidity and extent of the spread of fire in both cases could be accounted for by the many combustible roofs involved. Sparks carried by the wind from roof to roof quickly spread the fires over large areas. Of the 10 fire departments which fought the Ellsworth fire, and the 12 which fought the fire at Auburn, nearly all were volunteer.

The earthquake in Southern California in March produced conditions similar to those resulting from a conflagration, and contained the threat of serious fire disaster. Fortunately such fires as developed were controlled in spite of impaired fire department protection.

Two fires of near-conflagration proportions took place when large lumber yards were destroyed in southern cities. The first of these was at East Dallas, Texas, in July, when two adjoining lumber yards comprising the entire area of a large block, and a half dozen dwellings in adjacent blocks, were consumed. Only the good work of the fire department prevented a general conflagration. The second fire of this character occurred in October at Pensacola, Fla., when a lumber yard and 16 dwelling houses were destroyed.

In Canada, the outstanding losses were in church buildings. These included the Churches of *St. Louis de France* and *St. Jacques le Mineur* in Montreal, the cathedral and convent at Valleyfield in Quebec, and St. Joseph's College at St. Joseph, New Brunswick. The burning of 31 stores, 9 dwellings and many small structures at Cornwall, Ontario, in August was a fire of conflagration proportions and was fought by the local volunteer fire department.

In all of the fires the factors responsible for the large loss were large amounts of combustible and flammable materials, poor building construction and fire protection inadequate to the hazard. All of them taxed the fire department facilities. Many of the fires were in occupancies such as lumber yards and oil storage plants, where the fire departments at best were at a disadvantage from the start. Others were in buildings of large area and combustible construction for which the only practical protection is automatic sprinklers.

What the Fire Department Is Expected to Do

LAST month the Wisconsin Industrial Commission issued a statement regarding fire department services. The statement was a fine thing for the up-to-date departments of the state, since it told the public about the modern practices which many fire departments are employing. It was also an excellent reminder to those fire departments which are still operating on the basis of the old water-throwing days.

"Throwing water and extinguishing fires," says the Wisconsin Commission bulletin, "is not the only nor the most appreciated function of a modern fire department.

"The firemen's first duty is to rescue people from burning buildings. Firemen practice to carry people down ladders, lowering them by ropes and holding life nets for those who must jump.

"Getting people out who are unconscious is only half the battle. Firemen are taught to resuscitate those overcome by smoke, fumes, gases, electric shock or water. In every fire company there

D. M. Maher

Houses burning in the Ellsworth, Maine, conflagration of May 7, 1933. This fire was fought by the fire departments of Ellsworth and nine other communities. Nearly all of these were volunteer departments.

should be some members trained in hand-resuscitation methods. . . .

"In his battle against fire, a low loss is the fire chief's aim, whether that loss be by water, smoke or flame. The department carries tarpaulins to cover furniture in homes, merchandise on tables and shelves and costly machines in shops and factories. The tarpaulins are used to form basins to catch water and troughs to run water outdoors or down shafts and stairways where it will do the least damage.

"Firemen do not fight fire from the street. They enter buildings and locate the fire and aim to prevent its spread. If smoke and gases make fire fighting difficult, they ventilate to remove them.

"Realizing that usually water causes more damage than flame, they use hand pumps or small hose lines, if possible, to put out the fire, backed up by larger lines to be used in case of need.

"Opening doors and windows and cutting ventilation openings in roofs is done with the least possible damage and with a view of easy repair.

"An important saving of loss begins when the fire is out. Water and débris are removed from floors to prevent further damage, window and roof openings are closed to keep out rain and snow, fire is started in the heating plant to dry things out, water-soaked goods are separated from the dry and everything left in clean and presentable shape. In covering roof and window openings tarpaulins again come in handy. Tar paper also can be used.

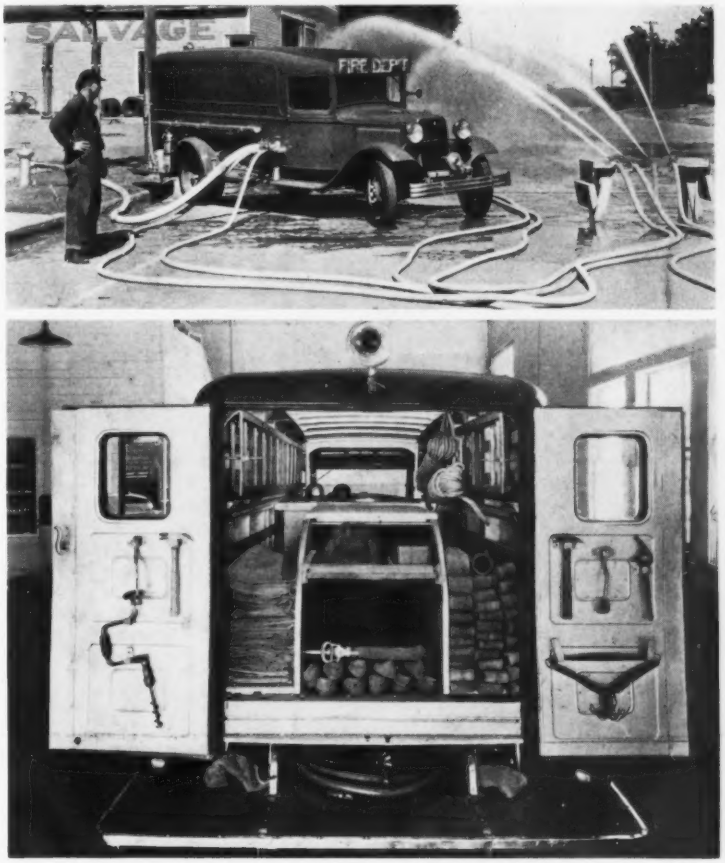
"The modern chief looks for the cause of the fire or fires. Either he, or someone designated by him, makes an immediate and close investigation of the fire and preserves all evidence of incendiarism and assists in the prosecution of the arsonist who sets fires for profit or revenge.

"The good department prevents many fires by inspection work.

"Not mere throwing of water, but services mentioned herein are appreciated and sell the fire department to the public."

Stillwater's Volunteer Salvage Wagon

SALVAGE work has been an important part of the operations of the Stillwater, Okla., Fire Department. Through the efforts of its progressive chief, J. Ray Pence, the City Commissioners were this year induced to furnish the fine salvage kit illustrated herewith which recently has been put in service. If we may go by the appreciation expressed by citizens, the salvage work of the department is one of the best goodwill-building activities which the department has ever undertaken.

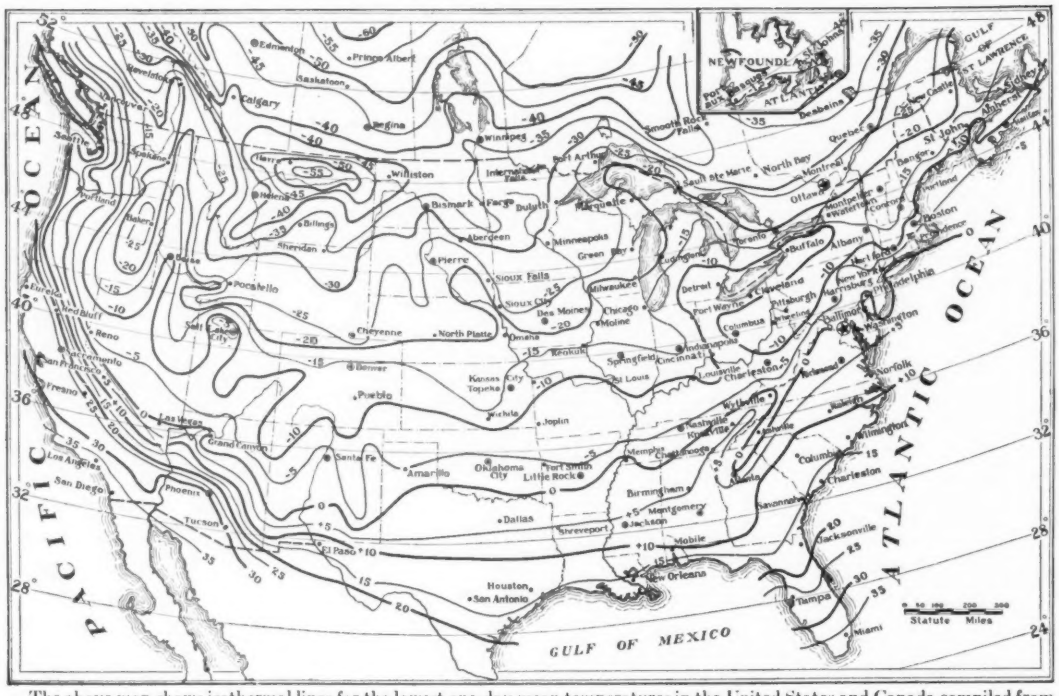


New salvage wagon and squad of the Stillwater, Oklahoma, Fire Department, which is manned by a volunteer crew. The upper picture shows it operating four 1½-inch hose streams from its 200 G.P.M. pump. Below, the business end of the wagon, showing salvage covers, salvage tools, assortment of hose and small ladders.

Unusual interest on the part of the volunteer crew of this new piece of equipment is a reason for the good results it has achieved. Chief Pence and four of the volunteers put in seven days of intensive training in salvage work at Chicago this summer under one of the leading salvage corps officers of the country, Frank C. McAuliffe of the Chicago Salvage Corps.

Seven partly paid volunteers under the direction of Captain Everett Hudiberg, to whom we are indebted for the following description of the salvage wagon and its equipment, make up the personnel of the salvage company. Captain Hudiberg is at present taking a four-year engineering course at the Oklahoma Agricultural and Mechanical College, and sleeps and stays at the fire station in his spare time. The company responds to all alarms.

The truck is a ton-and-a-half V-8, and carries 14 standard salvage covers and the usual complement of special tools for salvage work including brooms, mops, squeegees, as well as hammers, bits, wrenches, lights, ropes and also forcible entry tools. It is equipped with a 200 G.P.M. booster pump, 300-gallon water tank, and 250 feet of 1-in. booster hose. There is also 200 feet of 1½-in. hose, 500 feet of 2½-in. hose, and an assortment including playpipes, hose connections, a cellar nozzle, two 2½-gallon foam extinguishers, and two short ladders. A neon sign with letters 6 inches high gives the apparatus a high degree of visibility in traffic. All work on the rig, including the making of the ladders, was done by members of the department. Total cost of the truck, pump and built-in appliances was $1,500.



The above map shows isothermal lines for the lowest one-day mean temperatures in the United States and Canada compiled from Weather Bureau records. These lines of equal temperatures do not represent extreme or record low temperatures, but indicate the temperatures against which protection should be provided for fire-protection equipment in various parts of the country.

New York Volunteer Firemen on the Air

VOLUNTEERS in the Hudson River Valley district of New York State are undertaking a continuous radio program this winter. Captain William Paul Babcock of Nyack, N. Y., inaugurated the series from Station WGNY on Saturday, December 2, at 10:30 P.M., Eastern Standard Time.

With him as guest speakers were Chief Wesley A. Howell, President of the Orange County Volunteer Firemen's Association, August Schreiber, Jr., President of the Rockland County Volunteer Firemen's Association, and former Chief Ray Ackerman of Nyack. The musical part of the program was furnished by the firemen's band of Florida, N. Y.

The series of programs is to provide information for the general public as well as entertainment. This is evidenced by the second program on Sunday evening, December 17, when Chief W. M. Seeley of Middletown, N. Y., spoke on the timely subject of the fire hazards of Christmas decorations and celebrations.

Station WGNY is owned and operated by Mr. Peter Goelet, on whose estate near Chester, Orange County, N. Y., the station is located. It has a power of 100 watts and operates on a frequency of 1210 kilocycles.

Accident Insurance for Volunteer Firemen

OF vital interest to the volunteer fireman is the subject of protection against injuries received while performing volunteer duties. In many states volunteer firemen are covered by Workmen's Compensation, in others the State Firemen's Association maintains an accident indemnity program, but in several they are not so covered, and must rely upon other forms of insurance coverage.

Several of the larger casualty insurance companies in the United States have for some time been writing accident insurance under group policies specially prepared to cover all the members of a volunteer fire department or company.

Most such policies specifically agree to insure the volunteer fireman while actually on duty as a member of the fire department or fire company purchasing the policy, including while going to or returning from fires, and while at fire drills, parades, tests or trials of fire-fighting apparatus. The policy also agrees to cover paid members of such a department or fire company while actually on duty at fires or while answering an alarm or directly returning from fires.

The policy may be purchased for different amounts of so-called principal sum (insurance against death and loss of legs, arms, etc.) and weekly indemnity for loss of time from regular occupation not to exceed a period of fifty-two consecutive weeks. The fire company may, at its option, add hospital coverage to the policy.

To illustrate, a policy of $1,000 principal sum and $15 weekly indemnity is reported to cost $100 per company provided each uses only one piece of apparatus, and for each additional piece of apparatus, the premium is increased by 25 per cent. This premium is charged for each company regardless of the number of companies in the department. Hospital indemnity is added at a slight increase in premium. The insurance is issued up to a maximum of $3,000 principal sum and $25 weekly indemnity.

This form of insurance is not issued in New York State where a special statute requires a liability form of coverage.

Taking a Hydrant and Laying a Line

Crowding a Lot of Practical Drill Work into the Limited Time a Volunteer Department Has for It

By **Robert B. Rogers**

Battalion Chief
Seattle Fire Department

Chief Rogers knows the problem of drill work as it presents itself to the volunteer fire department as a result of his several years of experience as an instructor at the fire schools held under the auspices of the Washington State Firemen's Association. The accompanying suggestions are used through the courtesy of the Association's official bulletin, "Fire Station Digest." Chief Rogers took the pictures illustrating this article specially for VOLUNTEER FIREMEN, *and we are indebted to some of the boys in the Seattle Fire Department for demonstrating the operations photographed.*

A GROUP of a dozen volunteer firemen are gathered at the fire station. It is the night of the monthly meeting. They break up into little groups and conversation hums as they discuss the last convention, jobs, town finances, the price of produce and other topics of local interest. The Chief has not yet arrived.

"The Chief says we'll drill with the pumper tonight, if the weather is favorable," announces one of the firemen.

The hum of conversation ceases. It is evident that drilling with the pumper is an unusual event, and a host of questions are asked. "What are we going to do? . . . Are we going to use water? . . . How long will the drill last? . . . Has he got some new stunt to try out on us, or will it be the same as that drill we had about a year ago? . . . If it is, that lets me out. All we did was drag some hose around, got ourselves all wet and didn't get anywhere."

It is plain from the conversation which follows the announcement, that there is plenty of interest in the pumper drill, but only so, "if the drill gets us anywhere." This then puts the initiative directly into the hands of the Chief, who is just now entering the fire station, to make the drill with the pumper educational and to add just the right amount of snap and spice to maintain interest.

"All right, men, we're going to drill with the pumper tonight," says the Chief. "Better peel off your coats and slip on your overalls. . . . Smith, you drive the pumper. Pull out the door so we can unload about 300 feet of hose and load on the same amount of old hose to drill with. . . . All right, the rest of us unroll 300 feet of that old hose to the right and we'll pull 300 feet off the pumper to the left. . . . Now we'll load the old hose. . . . Hose all on? . . . Okay. . . . How about the hydrant wrench, nozzles, pumpcan, axe and other equipment? Is it all on the pumper? . . . Okay. . . . Brown, you and Jones ride the rear end, I'll ride the seat. The rest of the gang go down by the hydrant on the corner. All right, Smith, drive 'round the block and by the hydrant."

The pumper goes around the block and, as it arrives 100 feet from the hydrant, the Chief stands up in the seat, points at the hydrant, and shouts the command, "Take that hydrant."

The hydrant man, with his wrench and the end of the hose, jumps off the pumper to make the connection on the hydrant, and the Chief orders the driver to drive straight ahead until 100 feet of hose is out of the hose bin, when he orders the driver, "Stop the pumper!" The Chief then runs around to the rear end and shouts the command, "100 feet of hose, 1-inch nozzle! Haul the line right straight ahead!" He reiterates this command several times until he is certain that it is understood by all hands, and then motions to the hydrant man, "No water."

How did the drill go off? Not so hot. Brown in taking the hydrant dropped the hydrant wrench, held the hose in the wrong hand and nearly let the hose get away from him. Jones stood on the rear running board and pulled the hose off in a pile so that when they hauled it, a coupling caught under the rear wheel of the pumper and the Chief had to run back and clear it. The Chief put on a 1⅛-inch nozzle. Smith sat in the driver's seat and never assisted in laying the line at all. In hauling the line, the Chief and Jones were both within five feet of the nozzle.

This operation is probably the simplest hose operation that any group of firemen can undertake and is the commonest fire fighting operation, being used more often than any other at actual fires. Its performance, however, involves a number of fundamental operations and without proper training in them no fire department can hope to operate with any great degree of success.

These fundamental operations are as follows:

1. To take a hydrant.
2. To remove hose from the hose bed for hauling.
3. To measure the amount of hose removed.
4. To break a coupling.
5. To put on a nozzle.
6. To haul a line of hose on the ground.

It is apparent from the drill just performed that this fire department is not grounded in these fundamentals. The Chief then is confronted with the problem of training twelve firemen in these fundamentals, with a limited time of perhaps two hours, once a month, to do it in. To train this number of firemen to take the hydrant would alone take the major part of the time available, if the training is done with the pumper. Also, during the entire training period, eleven firemen would be looking on while one fireman was receiving his training.

The training can be speeded up by dividing the twelve firemen into four teams of three each.

Training in taking the hydrant can be carried on without the pumper and two teams can work at once by using two 50-foot sections of hose with a nozzle attached to each, three firemen to a section, one at the nozzle, one in the middle of the section and one at the female coupling with the hydrant wrench, who is the hydrant man. The men line up about 50 feet from the hydrant, nozzle in the lead, and run by the hydrant. As the hydrant man comes up to the hydrant, he takes a wrap on it and makes the connection the same as though the pumper were used.

As soon as the hydrant is cleared, the next team is ready to perform the same operation. By alternating the firemen, each one can get a chance to take the hydrant in a very short period of time.

While these two teams are engaged in taking the hydrant, another team can be engaged in making and breaking

Illustrating the Two Principal Steps in Taking a Hydrant

Photographs show the two steps in the operation of taking a hydrant. At the right the hydrant man is shown approaching the hydrant just after he has left the rear step of the apparatus. The second step is shown at the left. (Wrenches, hydrants and couplings illustrated on these pages are those in use in Seattle and differ in some particulars from those in use in some other places.)

couplings and putting on a nozzle. Lay 150 or 200 feet of hose in a straight line from the pumper, uncoupled, with a nozzle at the far end, disconnected. Start the team, one at a time, to connect to the pumper discharge port, make up the connections and put on the nozzle . . . then to take off the nozzle and break all the connections on the way back. This is one of the finest training stunts that can be performed.

The fourth team can at the same time be practising removing hose from the bed, about 150 feet each time being sufficient for the purpose.

The teams can be alternated until all have had a try at each one of these operations.

This leaves only the practice in hauling a line, and this operation is important enough to concentrate all your firemen on as it combines all the operations. Place the pumper 40 feet from the hydrant with a line leading from the hose bed to the hydrant and connected to it. Use the three fireman teams. Have them remove 150 feet of hose for each operation and haul it, alternating the directions, first left, then right, then straight ahead. Use all the firemen for picking up the loading of the hose. By use of this system, with variation to fit the particular set-up in each instance, it is possible to crowd a maximum amount of training into a very limited time.

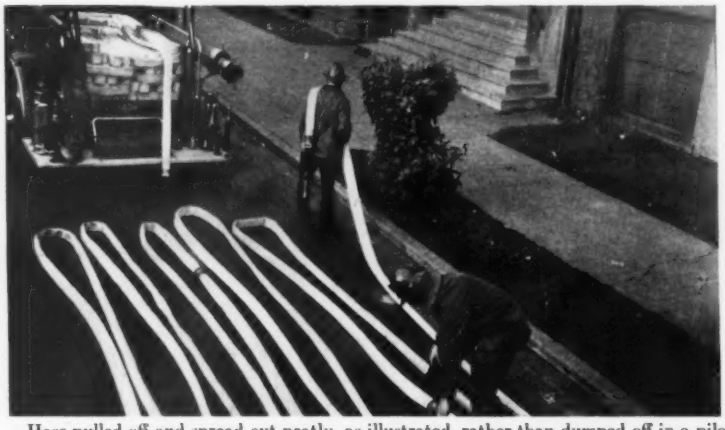
How to Take a Hydrant

The last two sections of hose placed in the hose bed, i.e., the first to pay out, should be loaded loosely in such a manner that they will pay out easily and the female end of the hose should be equipped with a hand hold or leather strap. The hydrant wrench, or wrenches, should be placed on the hose right alongside of the hand hold.

In taking the hydrant, the pumper should drive by it as close as possible and slow the speed down to ten miles per hour or less so that the hydrant man can leave the apparatus and take the hydrant without danger of being thrown from his feet or falling. If one or more firemen are riding the rear end, they assist the hydrant man as he leaves the pumper by pulling off some slack hose for him. Pulling off too much hose will hinder rather than help the operation.

Carrying the wrench and hose in the manner illustrated above, the hydrant man leaves the pumper about 20 or 30 feet before reaching the hydrant, runs toward the hydrant and goes around it himself in the direction of the hand carrying the hydrant wrench, making a complete wrap with the hose on which he places his foot. The foot must *never* leave this position until all danger of the hose being pulled away is past, or until it is time to pick up the hose and make the connection.

Taking off Hose before Hauling



Hose pulled off and spread out neatly, as illustrated, rather than dumped off in a pile makes the hauling operation, which comes next, proceed smoothly. Men are picking up hose preparatory to hauling the line.

Place the wrench on the hose cap and remove it. Then place the wrench on the main stem of hydrant without dropping it or laying it down so that when ready, the water can be turned on without lost motion. Then take the wrap of hose from around the hydrant and make the connection. The connection must *always* be made to the hose port in the direction of the lay, unless this port is inoperative for some reason.

You are then ready to turn on the water.

Speeding of the apparatus is unnecessary in this operation, so never practice to see how fast the pumper can be driven and a fireman still be able to take the hydrant.

How to Remove Hose

When the pumper, laying a 2½-inch line, arrives at the fire, it should never be stopped short of or on the hydrant side of the fire, but should, if possible, be driven about 50 feet past the fire. If only 50 or 100 feet of hose are needed to reach the fire, which is the situation at most fires, team work in handling hose is not of such great moment. Nevertheless, if firemen are not trained on the short hauls they will not be prepared for the long hauls where team work really counts.

Never stand on the rear running board and throw the hose on the ground in a pile. The proper method is for each fireman in turn to step up on the running board and grasp the folds of hose at the bends at rear of hose bed and stepping back, to drag the hose well to the rear of the pumper, spreading it out fanwise in such manner that none of the hose will be crossed or piled up.

While the line is being broken and the nozzle attached by one fireman, the others can be spreading the hose and getting their places on the line at couplings ready for hauling.

The number of lengths of hose needed for the line should be determined by the officer. The amount of hose pulled off may be easily measured by counting the couplings as the hose is pulled off the wagon.

How to Make and Break Couplings

Making and breaking couplings is a one-man job.

To break a coupling: straddle the hose *back to the pumper or hydrant.* Pick up the coupling and hold the hose between the knees just back of the male coupling; grasp the hose ahead of the female coupling with the left hand and with the right hand turn the swivel on the female coupling to the right until the connection is broken. The motions with the right hand should be in the form of a swinging motion and at the same time the left hand should guide the female coupling up in such a way that there is no tension on the hose threads. Do not drop or throw the couplings on the ground, but lay them down.

To make a coupling: straddle the hose *facing the pumper or hydrant* and hold the hose between the knees just ahead of the female coupling; grasp the hose just back of the male coupling with the left hand and with the right turn the swivel to the right until the connection is made. The left hand should guide the male coupling up to the female with the threads in the same plane and in such a manner that there is no tension on the threads.

Line-up in Hauling Hose on Ground

The line-up for hauling hose on the ground. The first fireman is at the nozzle, the next fireman on the first coupling, the next man on the third coupling, and so on.

Breaking Coupling

Breaking coupling. Man has back to hydrant. Female coupling in left hand, hose clasped by knees about 12 inches from male coupling.

In putting on a nozzle the male coupling is similarly held by the left hand, and the nozzle screwed on with the right.

How to Haul a Line

The amount of hose to be hauled and the number of firemen present to perform the job somewhat vary the procedure on this operation so a little common sense will have to be exercised. The following holds good in all cases, however. A fireman hauling a line should never be on the hose at any place except at a coupling; a coupling should never be carried any place except on the back, immediately behind the shoulder; the hose should in all cases be kept in a straight line between the firemen hauling it (that is, a fireman should never gain on the fireman ahead of him); and the hauling of the line should not be halted when the nozzle reaches the fire but should be continued until enough hose has been secured for a working line.

When the line is started in, the first fireman takes the nozzle over his shoulder and starts for the fire, the next fireman takes the first coupling, the next fireman the second coupling, and so on. It may be necessary in long hauls to change this lineup of firemen by placing a fireman at the nozzle, one at the first coupling, skipping the next coupling and then placing firemen on the next two couplings. A little practice will soon give the right lineup for most all layouts.

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Volume 1 January 1934 Number 4

Our Campaign for Members

This issue of VOLUNTEER FIREMEN is being mailed to practically every volunteer fire department throughout North America. It was printed in an edition of over thirteen thousand copies. There has been a steady flow of applications for membership in the Volunteer Firemen's Section of the National Fire Protection Association since the section was organized less than four months ago. The cordial reception of this plan and the magazine, VOLUNTEER FIREMEN, by volunteers throughout the country is little short of amazing and is concrete evidence that the section is filling a real need. We intend to persistently continue our campaign for membership until every volunteer department and company has had an opportunity to become fully familiar with the purpose of the section and the advantages of joining it.

We repeat here the program of the Volunteer Firemen's Section:

1. The interchange of experience among volunteer fire departments.

2. The development of a medium for broadcasting new developments and new ideas of benefit to volunteer fire departments.

3. The development of standard practices and methods for fire fighting by volunteer fire departments.

4. The promotion of fire prevention work in rural districts.

5. The promotion of the organization of new volunteer fire companies and extension of the service of existing companies where necessary.

We urgently ask those readers not now members of the section to bring about a discussion of the section at the next meeting of their company.

The First Thousand

WE are proud to print herewith the names of the volunteer fire companies whose members comprise the first thousand volunteer firemen who have affiliated with the Volunteer Firemen's Section of the National Fire Protection Association. Every section of the country is represented in this list. The first company to join the section was the Union Fire Association of Bala-Cynwyd, Pennsylvania, on September 25, 1933. This was closely followed by the Pawtuxet Volunteer Fire Company of Cranston, Rhode Island, on September 27, the Oxford Fire Company of Oxford, Maryland, on September 28, and the Whitefish Bay Volunteer Fire Department of Whitefish Bay, Wisconsin, on September 29. The Vigilant Hose and Reel Company of Keyser, West Virginia, included forty of its members in its application for membership in the section. This is the largest number to date from any one company. Sixteen states are represented in the list, an indication of the widespread interest and appeal of the section to the volunteer firemen.

Yuma Fire Department No. 1, Yuma, Arizona.
Barstow Fire District, Barstow, California.
Red Bluff Fire Department, Red Bluff, California.
South San Francisco Fire Department, South San Francisco, California.
Englewood Volunteer Fire Department, Englewood, Colorado.
Florence Fire Department, Florence, Colorado.
Trumbull Volunteer Fire Co. No. 1, Trumbull, Connecticut.
Clayton Fire Company, Clayton, Delaware.
Haynesville Volunteer Fire Department, Haynesville, Louisiana.
Easton Fire Company, Easton, Maryland.
La Plata Volunteer Fire Department, La Plata, Maryland.
Oxford Fire Company, Oxford, Maryland.
New Ulm Fire Department, New Ulm, Minnesota.
Waterville Volunteer Fire Company, Waterville, Minnesota.
White Bear Lake Fire Department, White Bear Lake, Minnesota.
Bancroft Fire Department, Bancroft, Nebraska.
Blair Fire Department, Blair, Nebraska.
Protection Hose Company No. 7, Chateaugay, New York.
Vigilant Engine, Hook and Ladder Company, Great Neck, L. I., New York.
Hamburg Volunteer Fire Department, Hamburg, New York.
Excelsior Fire Engine Company, Pearl River, New York.
Ravena Hose Company No. 1, Ravena, New York.
Saint Remy Volunteer Fire Department, St. Remy, New York.
Tappan Volunteer Fire Association, Tappan, New York.
Valley Stream Fire Department, Hook and Ladder Co. No. 1, Valley Stream, New York.
Hillsboro Volunteer Fire Department, Hillsboro, Oregon.
Union Fire Association, Bala-Cynwyd, Pennsylvania.
Collingdale Volunteer Fire Company No. 1, Collingdale, Pennsylvania.
Montgomery Volunteer Fire Company, Montgomery, Pennsylvania.
Jenkins Township Volunteer Hose Company No. 1, Pittston, Pennsylvania.
Upper Darby Fire Company No. 1, Upper Darby, Pennsylvania.
West Manayunk Fire Company No. 1, West Manayunk, Pennsylvania.
Windber Fire Company No. 1, Windber, Pennsylvania.
Chepachet Fire Company, Chepachet, Rhode Island.
Pawtuxet Volunteer Fire Company, Cranston, Rhode Island.
Greenwood Volunteer Fire Company, Greenwood, Rhode Island.
North Kingstown Fire Department, Wickford, Rhode Island.
Philip Volunteer Fire Department, Philip, South Dakota.
Wilmot Fire Department, Wilmot, South Dakota.
Garland Fire Department, Garland, Texas.
Luling Fire Department, Luling, Texas.
Texas City Volunteer Fire Department, Texas City, Texas.
Victoria Fire Department, Victoria, Texas.
Vigilant Reel and Hose Company No. 1, Keyser, West Virginia.
Terra Alta Volunteer Fire Department, Terra Alta, West Virginia.
Adams Fire Department, Adams, Wisconsin.
River Falls Volunteer Fire Department, River Falls, Wisconsin.
Whitefish Bay Volunteer Fire Department, Whitefish Bay, Wisconsin.
Imperial Varnish and Color Company, Fire Brigade, Toronto, Ontario.

CLASSES OF MEMBERSHIP

National Fire Protection Association

Organization Membership

STATE and regional associations of volunteer firemen shall be eligible to organization membership in the National Fire Protection Association and entitled to six votes in the affairs of the Association and four sets of the publications which go regularly to N.F.P.A. members and members of the Volunteer Firemen's Section. — Dues $60 per year.

Membership for Individuals

Any volunteer fireman who so desires may apply for regular membership in the National Fire Protection Association. This entitles him to one vote in the affairs of the Association and a complete set of the publications which go regularly to N.F.P.A. members and members of the Volunteer Firemen's Section. — Dues $10 per year.

Volunteer Firemen's Section

An individual volunteer fireman shall be eligible to membership in the Volunteer Firemen's Section. He shall receive one copy of VOLUNTEER FIREMEN, the monthly journal of the Volunteer Firemen's Section, mailed regularly to his home address. — Dues 50 cents per year.

Because of the very low individual dues a minimum of 20 members from one department or fire company is required. Membership may be applied for by one member of the company or department collecting 50 cents for each of the 20 or more members and making a single remittance for the group, or the company or department may vote to take out membership for its entire roster and make a single remittance from the company or department treasury. In either case the company or department itself is thereby made an eligible member of the National Fire Protection Association and entitled to one vote and full participation in the affairs of the Association. All the literature regularly issued to N.F.P.A. members is mailed to headquarters of the company or department.

The requirement of a minimum of 20 names may make some difficulty for the few departments whose rosters are less than 20. These may make special arrangements. They may send in the minimum remittance for 20 men at 50 cents each and divide this pro rata. This would add only a few cents per man. Another plan which could be worked out in most communities would be to get a number of citizens, interested, but not active members of the department to make up the required 20 for the sake of receiving the interesting material in VOLUNTEER FIREMEN.

Letters to the Editor

National Fire Protection Association,
Boston, Mass.

I wish to compliment you on your magazine the VOLUNTEER FIREMEN. The makeup is fine and I like the subjects it contains, as they should especially interest the volunteer departments.

Yours very truly,
D. E. MOSER, Secretary,
Montana State Firemen's Association,
Bozeman, Mont.

* * *

National Fire Protection Association,
Boston, Mass.

We have long felt the need of some publication devoted to the interests of Volunteer Firemen and matters that are of particular interest to them. A periodical such as you have will prove of great value in many ways, especially as a medium through which ideas and new methods of operation may be exchanged between the various progressive volunteer firemen's organizations.

Considering the large number of communities that depend on volunteer fire department protection, the importance of this subject cannot be overestimated. The protection furnished by those volunteer companies that are properly equipped and whose members keep abreast of the times compares very favorably with that obtained under highly trained departments in the larger cities. In fact, the interest displayed and effort put forth by the members of many volunteer departments is not duplicated in the majority of paid departments.

Volunteer departments in the past have proven their value and have ably filled a position in the municipal affairs of thousands of communities. They will continue to do so, and even better their record, by constant effort in study and practice, according to the modern methods and practices made available through such sources as your paper and others.

Very truly yours,
E. H. HOLSTEIN,
Volunteer Fire Department
Wheaton, Ill.

* * *

National Fire Protection Association,
Boston, Mass.

I have received the November issue of VOLUNTEER FIREMEN and am very enthusiastic over it, having read every word from cover to cover. It is truly a valuable magazine for the Volunteer Fireman and has much valuable information in it.

Last night at our regular monthly meeting I presented this magazine, and 19 of those present subscribed to this magazine. As we have thirty men in our department, I know that there will be several who were absent last night who will subscribe to your magazine, and you will receive a list with remittance within a few days from our secretary.

Wishing you every success, I am,
Yours very truly,
E. E. SALGE, Chief,
Volunteer Fire Department,
Weslaco, Texas.

* * *

National Fire Protection Association,
Boston, Mass.

Allow me to voice my approval of your plan for the volunteer departments. I believe it of great worth and should prove of great interest and benefit to the volunteer departments.

Very truly yours,
HUGH F. MORRIS,
Chief, Fire Department,
San Mateo, Calif.

* * *

National Fire Protection Association,
Boston, Mass.

It seems to me that your new Volunteer's Section and the magazine should meet a real need in coördinating the various departments of volunteer firemen throughout the country, and bringing about an exchange of views that will be helpful in the solution of their problems.

Sincerely,
GEORGE J. RICHARDSON, Secretary,
International Association of
Fire Fighters,
Washington, D. C.

* * *

National Fire Protection Association,
Boston, Mass.

Am enclosing 20 subscriptions to your magazine, VOLUNTEER FIREMEN, also check for $10.00 to cover same, and our annual dues in the Volunteer Firemen's Section of the National Fire Protection Association.

Your organization particularly the men responsible for this Volunteer Firemen's Section of your Association are to be congratulated for their efforts in behalf of the Volunteer Firemen.

Wishing you the best of success in this new undertaking, and hoping that every Volunteer Fire Company will see the advantage of enrolling in your Association, I am,

Very respectfully yours,
J. S. LANGLETZ, Secretary,
Volunteer Fire Company,
Montgomery, Pa.

Annual Reports

One Way to List Alarms Answered

MOST fire companies make some sort of summary of the work they have performed during the year, usually listing among other things the number of runs made and the reason for each. Where there are several companies, members of a larger department, these summaries may be combined for a department report. If the reports are reasonably uniform it would be possible to further combine them to provide a record of the work done by the companies and departments in a county or state if desired.

A suggested classification of alarms or runs is given in the following list which may be of some help to departments who have no regular form at present, or who may wish to adopt a form which is more generally suitable than the one they are now using.

Kind of Alarm Answered	*Number*
Fires in dwellings	....
Fires in other buildings	....
Chimney fires	....
Fires in rubbish near buildings	....
Fires in dumps and rubbish in vacant lots	....
Grass and brush fires	....
Miscellaneous fires outdoors	....
Automobiles on street	....
Total fires	....
False alarms	....
Smoke scares and "needless" alarms	....
"Accidental" alarms	....
Miscellaneous emergency calls	....
Total alarms in company district	....
Calls from outside company district	....
Total alarms answered	....

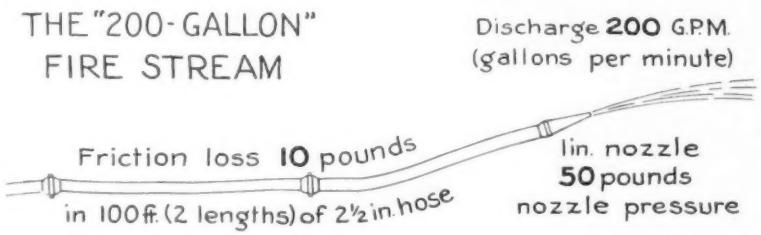
How well a list such as the above will fit the needs of any company or department would depend somewhat on local conditions. A company which makes many runs outside of its immediate district might wish to show the number of runs to each outside community or area, and these can break down the classification "Calls from outside company district" into an appropriate number of sub-headings.

Where the total number of alarms answered by a company or department in the course of a year is a small number, it is a good idea to make a tabulation for the last five-year period in addition to presenting the figures for the year immediately past, as this gives a better idea of the distribution of the company's work.

"Chimney fires" refers to fires in soot burning only in the chimney, and where the fire has not spread into the building. "False alarms" include only malicious false alarms. The heading, "Smoke scares and needless calls" are for those alarms which are the result of some well-intentioned mistake. "Accidental alarms" includes various alarms other than for fires such as occasionally accidentally come in from fire alarm or sprinkler systems as the result of repair work being done or some mishap.

The "200-Gallon" Fire Stream

A Convenient Unit to Use in Making Hose Layout Calculations at Fires


THE "200-GALLON" FIRE STREAM
Discharge 200 G.P.M. (gallons per minute)
Friction loss 10 pounds in 100 ft. (2 lengths) of 2½ in. hose
1 in. nozzle 50 pounds nozzle pressure

AT FIRES there is no time to do involved calculations in arithmetic in order to work out hose line layouts, arrangement of pumpers, and similar details. It is necessary to rely on certain factors which are known as the result of experience or study and from these make rough mental calculations.

In layouts involving 2½-inch standard fire hose, a working fire stream from a 1-inch nozzle discharging about 200 gallons of water per minute is a good starting point for rough calculations. This is a good working stream and one which is probably more generally useful in volunteer fire department practice than any other size. It has the peculiar advantage that the numerical units involved can be expressed in round numbers and be sufficiently close to actual figures so as not to materially affect the results.

These round numbers are given in the accompanying illustration. How slightly they deviate from the figures determined by tests is shown by the following. With 50 pounds pressure at the nozzle and a 1-inch nozzle, the discharge as determined in accurate tests is 209 gallons per minute. With 200 gallons per minute actually flowing, the nozzle pressure has been determined by tests to be 46 pounds. To call the stream 200 gallons per minute at 50 pounds nozzle pressure is accurate enough, as differences in hose and nozzles may introduce variations which are actually greater than these.

It has been explained in previous articles that a pressure or pushing force is needed to make water move through a pipe or a hose. This force is used up by having to act against the friction of the water passing through the hose. The more water moving, the greater is the friction loss. The friction loss in hose has been determined by actual test. The quality of hose, it has been shown, makes friction loss figures vary somewhat. Actual values for the friction losses in hose at flows between 200 and 209 gallons per minute are likely to be almost anywhere between 9 and 11 pounds per square inch.

The figure of 10 pounds per 100 feet of 2½-inch hose is a figure which is very close to the actual value in hose of reasonably good quality. Because it is a round number, it is a figure of considerable convenience in calculating hose layouts as is shown by the example given on this page. In the example note how the round number, 10, for the pounds of friction loss helps to make the calculation easy. In the last step of the mental arithmetic illustrated, it cancels out with the factor 100 for the number of feet of hose, so that all there is to the calculation is the multiplication of the pounds of pressure available to overcome friction by 10. This gives the feet of level hose line which can be laid.

VOLUNTEER Firemen who drive cars and use them when responding to fire alarms should be equipped with this Siren to clear the road and distinguish their cars from all other vehicles.

It is the most compact Siren we have ever seen, takes up but little room inside the hood or on the running board or in front of the radiator.

This Siren drives and takes current from your regular automobile battery. It takes so little juice it won't run a battery down; it can be used on every needed occasion.

The electric motor, a 6-Volt Special, is high-speed, developed especially for the U. S. Government, and turns 7,200 revolutions per minute. ➤➤ It is WATER, DUST and WEATHER PROOF. The Siren rotors are 4 inches in diameter, also especially designed to give a high pitched, distinctive tone. ➤➤ Order and try one ON SUSPICION and if you don't like it send it back to us.

No. C909. Special Fire Dept. Sirens **$7.95**

Fire Department Safety Lanterns

➤➤ Absolutely safe in escaping illuminating gas, gasoline vapors, paint and chemical fumes! Many a fireman lost his life from explosions of gas filled rooms ➤➤ because of his lantern.

SAFETY LANTERNS are light weight. Can be carried or hung over arm at any angle, leaving hands free for climbing ladders, etc. Handsome fire red lacquer finish.

SAFETY LANTERNS cost no more than ordinary portable lights — they are **LESS** expensive to operate. A battery gives from 60-80 hours intermittent service when used with Mazda No. 26 lamp bulb.

No. C778. Fire Department Safety Lanterns. Each..... **$2.19 EACH WITH ONE BULB**

➤➤ THREE FOR $5.75 ➤➤

Prices do not include battery.

➤➤ **Batteries, each**.....39c

Extra Bulbs, each.....12c

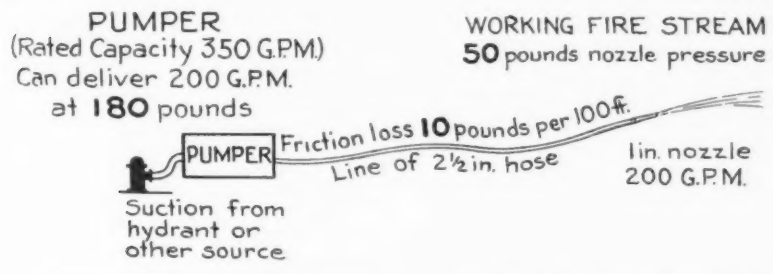
Receptacle for carrying two extra lamp bulbs built in cover.

W. S. DARLEY & CO.

2810 Washington Blvd. **CHICAGO**

Typical Calculation at a Fire

PROBLEM: You have a small pumper, 350 G.P.M. rated capacity. You know that the highest pressure against which it can discharge 200 G.P.M. for a hose stream is around 180 pounds. A hose line is to be laid out on level ground and you want to know how much hose can be placed between the pumper and the nozzle and still get a working stream.



MENTAL ARITHMETIC TO FIND ANSWER: Begin with 180 pounds which you know the pump can produce while delivering one fire stream.

Of this, 50 pounds is needed at end of line for nozzle.

$180 - 50 = 130$ pounds left to push water through hose (overcoming friction).

Since friction uses up 10 pounds per 100 feet of hose, the answer will be $\frac{130}{10} \times 100$ (or 130×10) $= 1{,}300$ feet of hose.

Volunteer Firemen's Accident Insurance

A special policy called a Volunteer Firemen's Group Accident Insurance Policy has been made available to Volunteer Departments by the Hartford Accident and Indemnity Company — one of the large strong old-line casualty companies. This policy pays if member firemen are injured while on duty. It pays for loss of time from regular occupation and substantial amounts for death and dismemberment. Your Department should have this protection. Mail the following coupon today. It will cost you nothing to get the full details regarding this valuable insurance contract.

You won't have to "pass the hat" if you have this policy

HARTFORD ACCIDENT AND INDEMNITY COMPANY

of HARTFORD, CONN.

Agents Everywhere

This coupon may save your members thousands of dollars

HARTFORD ACCIDENT AND INDEMNITY COMPANY
Hartford, Connecticut

Send information on Volunteer Firemen's Group Accident Policy.

Name.....

Address.....

.....

Letters to the Editor

National Fire Protection Association,
Boston, Mass.

I have been studying your literature in order that I would be in a position to know exactly what the N.F.P.A. is, and means, so that in turn I might be able to transmit such information to the volunteer companies of the State of Maryland.

I must admit that I had no idea such a wide scope of scientific information had ever been compiled. It is gratifying to think that there is an organization interested in such work.

R. E. Otto, Secretary,
Fire Prevention Committee,
Maryland State Firemen's Association.

* * *

National Fire Protection Association,
Boston, Mass.

In all my connections with firemen I have found the volunteers a very fine body of men as a whole, devoted to their fire department and very much more responsive to instruction than paid firemen. The National Fire Protection Association is undertaking a very worthy work in furnishing them with a medium for the exchange of ideas.

Yours truly,

Batt. Chief Robert B. Rogers,
Seattle (Wash.) Fire Department.

* * *

National Fire Protection Association,
Boston, Mass.

In a previous communication with you, you asked if I would send out notice of your organization and the magazine for the Volunteers. This has been done due to the many requests sent me inquiring of the nature and purpose of your Association. I have communicated with a number of departments advising them to join the N.F.P.A.

The November issue of Volunteer Firemen is much better than the October, and I anticipate a better and bigger issue each month with the added interest in this section.

At the present time the Educational Committee of our Association has quite an extensive educational program mapped out and some of the material in the Volunteer Firemen will undoubtedly be used.

Fraternally yours,

John J. Creedon, Secretary,
Utah State Firemen's Association,
Bingham Canyon, Utah.

Regular N.F.P.A. Publications

Volunteer fire companies enrolling 20 or more members in the Volunteer Firemen's Section will receive at their home address each month a copy of **VOLUNTEER FIREMEN**, the professional journal of the section.

In addition the company itself will receive the publications described below which are regularly issued to members of the N.F.P.A. These contain valuable and authoritative material, including illustrated reports on important fires, the technique of fire fighting and fire prevention.

Quarterly Magazine. A chronicle of the Association's activities, with valuable articles covering a wide range of matters relating to fires. These are prepared by leading authorities and cover such subjects as municipal and rural fire departments, latest results of fire research, methods of dealing with special fire hazards, including flammables and explosives, and reports of conflagrations and interesting fires.

Proceedings of Annual Meeting. A stenographic record of the transactions of the Association and the discussions incident to the receipt of the reports of its technical committees and adoption of its standards.

News Letter. A monthly bulletin to inform members of the latest developments in the fire field. Many publications other than those of the Association are rendered available to members through this medium. (Twenty-two important publications last year.)

Year Book and Directory. Complete list of members with addresses. Arranged alphabetically and geographically.

Index to subjects covered in the Printed Records. (Proceedings, Quarterly, etc.)

Committee Reports. Thirty-seven technical committees make regular reports to the Association. These are printed and made available to members for discussion prior to their being adopted by the Association.

Special Bulletins. Numerous special bulletins are mailed to members from time to time. These cover a wide variety of topics. Typical subjects covered are successful fire prevention campaigns and special reports on major conflagrations.

Educational Material, Posters, Etc. Educational literature, posters and pamphlets for the use of members are prepared, including a special budget of material for Fire Prevention Week observances.

Special Information Service

Members are privileged to write the Executive Office for information on their special problems. Much material other than that published is thus made available to members from the extensive files and library built up over a period of 37 years.

Executive Office

NATIONAL FIRE PROTECTION ASSOCIATION

60 Batterymarch Street, Boston, Massachusetts

PRINTED IN U. S. A.